DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-024439
Date Inspected: 16-Jun-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name:	See Report Below			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Orthotropic Box Girders

Summary of Items Observed:

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) personnel. The inspection was performed on the various field fit-up of weld joints and the Complete Joint Penetration (CJP) groove welds of the East and West Orthotropic Box Girders (OBG's). The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) and the Flux Cored Arc Welding (FCAW).

A). E10/E11

The QAI observed the Flux Cored Arc Welding (FCAW-G) of the weld joint identified as Weld Number (WN) 10W-11W-C1 and C2. The welding was performed by James Zhen ID-6001 utilizing the WPS ABF-D15-3042A-1 Rev. 0. The WPS was also used by the QC inspector William Sherwood as a reference to monitor and verify the welding parameters which noted and recorded by the QAI as follows: 236 amps, 23.0 volts and a travel speed measured as 290 mm per minute. The welding was performed in overhead position (4G) at an approximate incline of 22 degrees. The QAI inspector also verified the minimum preheat temperature of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. The CJP welding was completed during this scheduled shift.

B). Lifting Lug Holes

The QAI observed the CJP welding of the lifting lug holes identified as WN: 9E-PP79-E3, W1& W3 and 10W-PP88-W3-W4. The welding was performed by Jorge Lopez ID-6149 and Darcel Jackson ID-9967 utilizing

the WPS identified as ABF-WPS-D15-1050A-CU, Rev. 0 and 1110A, Rev. 1. The QAI also observed the QC inspector perform the visual inspection and verify the welding parameters during the production welding. The inspection performed by Fred Von Hoff and William Sherwood appeared to comply with the contract specifications. The welding performed on this date was completed.

C). Tower Splice Plates

The QAI observed the fillet welding of the west corner closure splice plate located at the 114 meter elevation of the West Tower Shaft. The welding was performed by Salvador Sandoval ID-2202 utilizing the FCAW as per the WPS identified as ABF-WPS-D15-F2200-3, Rev. 0. The QAI also observed the fillet welding of the north corner closure splice plate located at the 114 meter elevation of the West Tower Shaft. The welding was performed by Xiao Jian Wan ID-9677 utilizing the FCAW as per the WPS identified as mentioned above. The inspection was performed by Steve Jensen utilizing the WPS to monitor and to verify the welding parameters. The in process welding and inspection appeared to comply with the contract specifications.

The QAI also observed the installation, fit-up and tack welding of the splice plates located at the northeast corner of the North Tower Shaft. This task was performed by the welder Mike Jiminez ID-4671 utilizing the FCAW-G process as per the WPS ABF-WPS-D15-F2200-3 and F2200-2, Rev.0. The fit-up and tack welding was not completed during this scheduled shift.

This QA Inspector also performed a daily review and update of the field document control tracking records regarding the Orthotropic Box Girders, Longitudinal and Transverse "A" Deck Stiffeners and Deck Access Holes.

QA Summary

The welding was performed in the overhead and horizontal fixed positions utilizing the E7018-H4R low hydrogen and E71T-1 consumables. The 3.2 mm and 4.0 mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The WPS's were also utilized by the QC inspector's as a reference to monitor the welding operation, verify the welding parameters and verify the minimum preheat and the interpass temperatures. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter for the electrical welding parameters and Tempil Heat Indicators for verifying the preheat and interpass temperatures. At the time of the observation no issues were noted by the QAI.

The digital photographs on page 3 of this report illustrate some of the work observed during this scheduled shift.

WELDING INSPECTION REPORT

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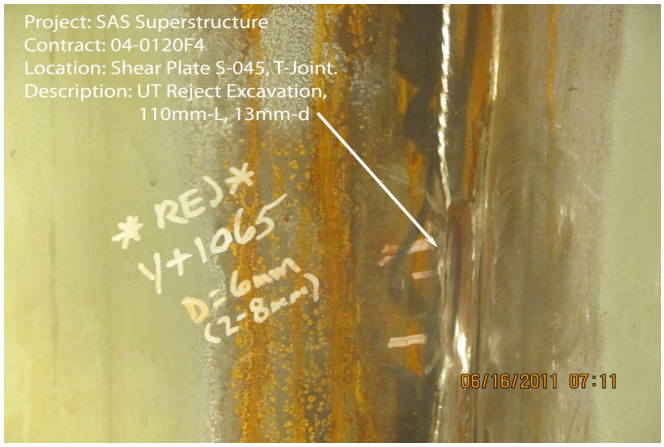

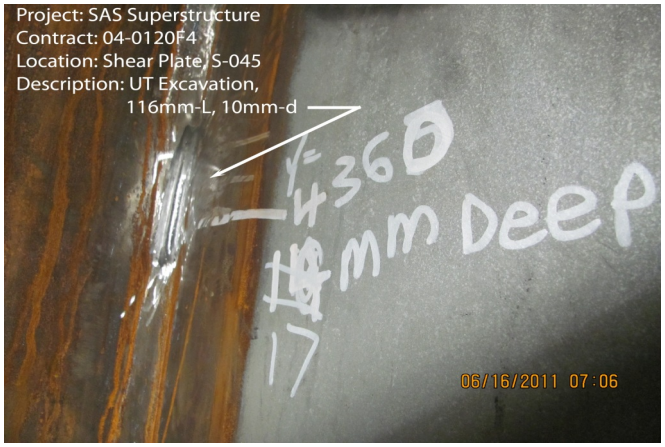

Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of welding, inspection and N.D.E. testing personnel scheduled for this shift.

Conversation Regarding Repairs on ESW Shear Plates:

In conversation regarding the repair process, the QAI was informed by Structures Representative, Douglas Wright, that the repair of the UT rejects on the shear plate identified as S-045 are approved for repair with the submittal of the contractor's Request for Weld Repair (RWR) to follow.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer